shown in Doctor Calvert's figure. Viewed in profile the inferior appendage at about its middle on the ventral edge has a distinct prominence, this prominence being opposite the origin of the basal tooth shown on the inner edge of the inferior appendage in Doctor Calvert's figure. In my material this tooth and the area supporting it extending along the inner side of the appendage to its base is pale colored and apparently less chitinized than the remaining basal portions of the appendage. The apex of the lower appendage terminates in a very narrow, suddenly constricted, flattened, thread-like body, shining and horn like, which resembles a claw or hook on the appendage, curved in directly toward the appendage in a semicircle opposed to the curve of the appendage itself. The tip of this small thread-like body is rounded. Opposed to this curved thread-like end of the appendage and opposite its tip is a minute spine on the appendage. This thread-like body is not discernible on all specimens because of the position of the appendages in drying and because of its small size and optical indistinctness. In life it is probably flexible and, in connection with the spine opposite it, is intimately concerned with the coupling of the sexes.

In the single male of *nathalia* the second spine described above on the supero-external edge of the superiors is minute or wanting and the edge is not concave as in *paulina*. The lower edge of the inferiors, seen in profile, is convex at about the middle but has no distinct prominence as has *paulina*. I detect a similar thread-like apical termination as in that species, but the position of the appendages makes it impossible to study this carefully, and I can not see any minute opposing spine as described for *paulina*.

3. A NEW TELAGRION FROM TRINIDAD, WITH A NOTE ON TELAGRION DAECKII BY PHILIP P. CALVERT.

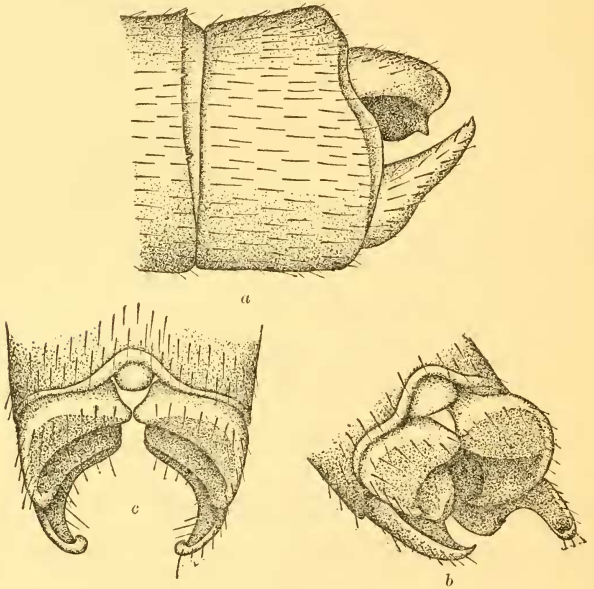
The following is a brief description of a new *Telagrion* collected by Mr. B. J. Rainey in Trinidad.

TELAGRION RAINEYI, new species.

Male.—Length of abdomen, 31 mm.; length of hind wing, 17.5.

Labium pale yellowish, median lobe with a U-shaped cleft for about two-fifths its length. Labrum dark green, very narrowly margined with pale yellow. Clypeus and dorsum of head black, marked as follows: A median yellow spot and on either side a smaller spot between clypeus and frons; occiput, on either side of the occipital ridge behind the ocelli, dull orange, separated from the eyes by a black line; through this orange is a dull black band, about one-third as wide as the orange at the eyes, and extending from the occipital ridge to the eyes, nearly parallel to the rear of the head; overlying the outer end of this black band and the yellow adjacent to it anteriorly are blue

postocular spots. The occipital yellow inclosed between the vertex, the black band above described, and the eye appears as a triangular yellow spot on either side; the apex of the triangle is opposite and separated from the lateral ocellus, and the base of the triangle is parallel to the eye, from which it is narrowly separated by black. That these yellow spots are in reality a part of the larger occipital yellow area, traversed by the black band above described, is evident only after careful examination. On the rear of the head below this yellow occipital area is a transverse broken black line, below which



LATERAL, DORSAL, AND OBLIQUE VIEWS OF THE MALE APPENDAGES OF *Telagrion raincyi*.

the rear of the head is pale yellowish. Gena above the labrum-clypeus suture black, below pale yellowish. First joint of antenna black, about two-thirds length of the second joint, which is light brown, dark brown at apex. Eyes dull green, brown above, paler below.

Thorax below pale yellow. Prothorax dark green above, posterior lobe laterally pale yellow, hind border low, rounded, entire. Mesepisternum brownish green; overlying this ground color on either side a bright pale blue antehumeral stripe, this stripe about one-third the width of the mesepisternum, of uniform width, and straight. Mesepimeron golden and green indefinitely. Metepisternum blue, paler than the antehumeral stripe, and with pale yellowish and greenish

showing through. Metepimeron flesh colored, its posterior and lower fourth (a triangular area) bright yellow as though overlaid with pigment, traces of green showing in the yellow. Coxae and legs pale yellow, spines short and sparse, dark brown; tarsal claws light brown, darker at apex, a minute tooth present.

Abdominal segment 1 brown above in median line, sides above greenish blue, basally and below light yellow; 2 brown above, darker apically, sides above greenish blue, below light yellow; 3–8 black above, 3–5 with greenish reflections, brightest on 3 and successively duller on following segments; interrupted basal rings on 3–7, narrower and complete on 8, greenish blue on 3, pale yellowish on 4–8; 3–7 greenish yellow beneath, brighter on the proximal segments, becoming duller, darker and obscured on the distal segments; dorsal color carried on the sides apically of 3–6 as lateral spots; sides of 7 largely and of 8 entirely dark; 9–10 bright light blue; superior appendages brown, inferiors pale flesh.

Stigma very dark brown, sides subequal, oblique, covering less than one cell. Quadrangle of front wing with ratio of anterior to posterior side 2:5; of hind wing 2:3. Postnodals, front wings 10, hind wings 8 or 9. Arculus at second antenodal. Posterior wing margin meeting A slightly distal to cubito-anal cross-vein in front wing, and at the cubito-anal cross-vein in hind wing. R_s arising from the vein of the nodus; M_3 in front wing arising from almost the same point, in the hind wing very closely to the vein of the nodus but appreciably proximal to it; in all four wings R_s and M_3 closely approximated at the first cross-vein between them and widely separated from M_4 at the same point. M_2 in front wing arising just proximal to fifth postnodal, in hind wing just proximal to fourth postnodal. M_{1a} arising in front wing at eighth postnodal, in hind wing at seventh or eighth. Cu_1 in front wing terminating on a level between fifth and sixth postnodals or at the sixth, in the hind wing at about the sixth; Cu_2 in front and hind wings terminating at the third postnodal.

Described from a single male in my collection taken March 10, 1912, at a small swamp near Cumuto, Trinidad, described on page 601 of this paper, by Mr. B. J. Rainey, to whom I am indebted for this and many more dragonflies, and for whom I take pleasure in naming the species.

The following brief notes on colors made from the freshly killed insect will give some idea of its peculiar beauty when alive. Dorsum of thorax black, a vivid ultramarine blue line just above the humeral suture. Below this blue line and all of the mesepimeron dark dull green; metepisternum largely vivid emerald; metepimeron pale lemon yellow. Eyes beneath emerald, above nile green; vivid ultramarine irregularly rounded postocular spots. Legs pale yellow, translucent. Abdomen: apex of 1, all of 2 and base of 3 laterally vivid blue as on thorax and postocular spots; sides of 3–7 yellowish;

dorsum of 3–8 black, little if any metallic; 9–10 bright sky blue, unmarked.

My reasons for referring this insect to *Telagrion* are the same as stated by Calvert in describing his *T. daeckii*,[1] in which paper the venation of both *T. daeckii* and *T. longum* Selys is figured. The blue postocular spots of *raineyi* are likely to prove evanescent in dried material. From the described species of *Telagrion, raineyi* is distinct by many characters. *T. fulvellum* Selys and *T. inversum* Selys have the abdomen reddish, and in these 2 species and in *longum* the last 3 segments are red or reddish yellow. *T. mecistogastrum* Selys is a larger dragonfly, with the abdomen of the male 50–52 mm. in length. *T. daeckii* has the apex of 7 and 8–10 pale blue.

The following notes on *Telagrion daeckii* by Dr. Philip P. Calvert have been added to this paper at my request:

TELAGRION DAECKII Calvert.

The recently killed male shows the following colors when compared with the original description:[2] Eyes blue above, becoming pale greenish below; the blue of the head, except the labrum, is mixed with greenish and hence not so pure as that of labrum, thorax, and abdomen; prothorax with a transverse line near the hind dorsal margin; mid-dorsal thoracic carina narrowly blue, dividing the median black stripe longitudinally; metallic green on abdominal segment 7 ending posteriorly in three prolongations, one mid-dorsal, the other two wider and infero-lateral.

In the recently killed female the eyes are pale olive above to pale green below, with two horizontal blackish stripes running from anterior to posterior margin of the eye, the upper stripe at about one-fifth, the lower at two-fifths the eye-height from the upper surface; these stripes sub-equal in width to the pale color which separates them. Heads generally paler and a little more greenish than in the male, this especially true of the labrum. Thorax pale olive green, with black markings as in the male, almost white on the sides inferiorly. Dorsum of abdominal segments 1–8 dark metallic green, widened just in front of the hind end of 2–6 and almost interrupted at the base of 3–7; sides of 1–6 pale green, of 7 and 8 and all of 9 and 10 (except a transverse dorsal basal black stripe or line on 9) pale blue, paler than the same segments of the male.

Appendages one-third as long as 10, pale bluish. Genital valves not reaching farther than the level of the middle of 10, their "palpi" barely extending beyond the level of the hind margin of 10. A stout vulvar spine on the hind ventral end of the sternum of 8. Hind margin of prothorax shaped almost as in the male, perhaps a trifle more produced dorsad.

Abdomen, 32.5–31.5 mm.; hind wing, 21.

Pairs of this species were seen flying together, the male clasping the female with his appendages, the bodies of the two forming an almost continuously straight line, moving rather slowly and stately among the *Pontederia* and *Nymphaea* (*Castalia*) near the banks of the mill pond at Malaga, New Jersey, June 27 and July 2, 1913.

4. SOME STUDIES OF PROTONEURA.

In 1860 De Selys brought under his new *sous-genre Protoneura* 3 species—*capillaris, tenuis*, and *sancta*. The first considered and best known, *capillaris* Rambur, must be regarded as the type of the

[1] Ent. News, vol. 14, p. 38, February, 1903.
[2] Idem, p. 36, February, 1903.